Product Brochure

Anritsu

MT9083 Series

MT9083A2/B2/C2 ACCESS Master™

850/1300 nm OTDR for Multimode Fiber
1310/1490/1550/1625/1650 nm OTDR for Single Mode Fiber

All-in-one Solution that Reduces Testing Times to Install and Maintain FTTx, CATV, LAN, Access and Metro Networks

850/1300 nm OTDR for MMF
1310/1490/1550/1625/1650 nm OTDR for SMF

MT9083 SERIES ACCESS MASTER OVERVIEW

Optical fibers are a key technology in today's modern communications systems, including access networks such as FTTx, CATV, and optical LANs. Moreover, optical-fiber technologies are playing increasingly important roles in mobile communications and digital broadcasting systems. Technicians maintaining these diverse systems are forced to carry a large variety of test equipment on-site, including OTDRs, Light Sources, Optical Power Meters, Visible Light Sources, etc. On the other hand, fiber construction requires measuring instruments with different functions and performance. As an example, FTTx access networks use single mode (SM) fiber whereas optical LANs use multimode (MM) fiber. In addition, core and backbone networks utilize long fibers while optical access networks use short fibers, both requiring different types of measuring instruments with different performance. But now Anritsu's new line of MT9083 ACCESS Master OTDRs solves all these problems by providing all the measurement functions and performance required for optical fiber construction and maintenance in a compact, lightweight, all-in-one unit that eliminates the burden of carrying many different test sets and instruments on-site. Whatever your work, construction or maintenance, long haul or intra-building, Anritsu has an MT9083 model for your needs.

ACCESS Master Key Features

- Ready to test in about 15 seconds … and all day without recharging
- Specialized testing modes simplify operation
- High resolution and high dynamic range ensure quick and through fiber evaluation
- Intelligent analysis software identifies problem splices, connectors and even macrobends
- Rugged, sealed design provides years of service in the most challenging environments
- Large 7-inch enhanced display for easy viewing of results indoors or outdoors
- Test multiple wavelengths with a single unit - single mode, multimode or both
- Unique in-service testing without the need for external filters
- New feature offering easy graphical summary & PDF reporting
- Verify connector quality with optional connector inspection microscope
- Password protection feature for important file on-internal memory

Full SCPI Command Support for Remote Operation or Automated Testing
Multiple Models to Meet Any Testing Requirement

- MT9083A2: General purpose, enhanced range with full 1 × 64 PON support, up to 39 dB.
- MT9083B2: High performance, enhanced range with full 1 × 64 PON support, up to 42 dB.
- MT9083C2: Ultra-high performance, enhanced range with full 1 × 128 PON support, up to 46 dB.

MT9083 Series

MT9083A2/B2/C2 ACCESS Master™

850/1300 nm OTDR for Multimode Fiber
1310/1490/1550/1625/1650 nm OTDR for Single Mode Fiber

New Feature Highlight

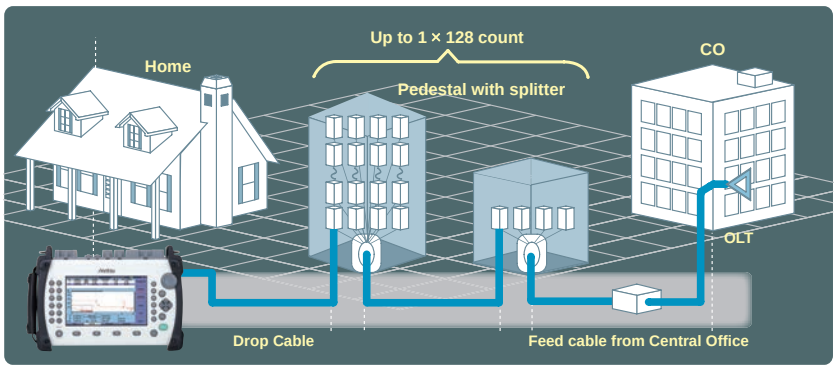
Anritsu is now pleased to announce the enhanced MT9083A2/B2/C2 models. The ACCESS Master MT9083x2 now features a 7-inch widescreen TFT-LCD display for use both indoors and outdoors, enhanced battery operation time (up to 12 hours), increased operating temperature range (–10° to +50°C) and new short-cut function keys.

Enhancements:

- Larger (7 inch), higher resolution (800 × 480) display with LED backlight
- Longer battery operation time: Up to 12 hours
- Wider operating temperature range: –10° to +50°C
- New shortcut keys to simplify operation: quickly change between trace and event table or access set-ups and mass storage
- Lighter – now only 2.6 kg (5.7 lbs)!

Optimized for Verifying PON Splitters Up to 1 × 128 Count

Many OTDRs claim to be able to test splitter-based, passive optical networks (PON) but the MT9083 delivers in a way others wish they could. With its high dynamic range and quick data acquisition, the MT9083 provides unparalleled resolution of single or closely spaced, cascaded splitters up to an industry-leading 1 × 128 count.



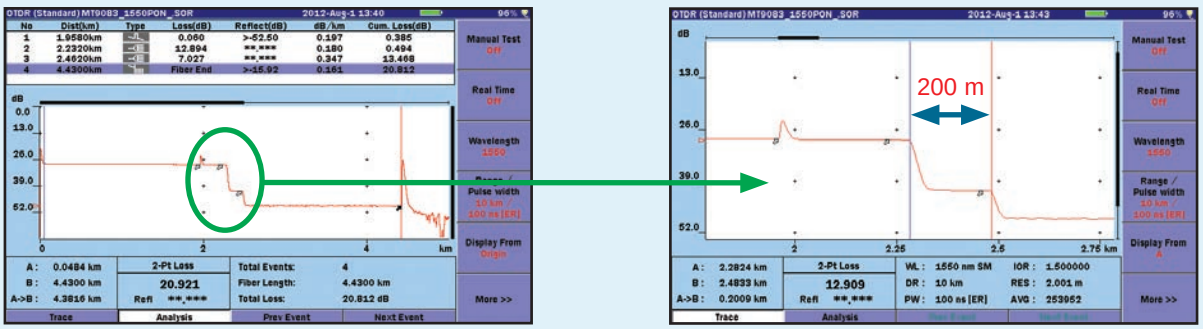


Fig 1: Typical PON 1 × 64 count System Measurement from the customer premise.

The MT9083 Series Enhanced Range Mode and a Pulse width of 100 ns provides excellent dynamic range while not compromising deadzone resolution to clearly display multiple, high loss splitters.

Designed with the Features that Matter Most

When buying products, you tend to choose ones that are innovative and from established companies. When you need to install and maintain optical networks, this should also apply. With over 50 years of combined OTDR design, Anritsu, delivers the features that matter.
Having been in the test and measurement business for a long time, we understand that things like performance, portability, reliability, easy operation and of course price are important.

Quick Startup
The ACCESS Master is ready for measurement about 15 seconds after power-on so productive work can start immediately.

Long Battery Life
Since AC power is not always available where you need it, especially at fiber pedestals, the MT9083 typically provides up to 12 hours of operation on a single charge. This coupled with an optional car cord (for cigarette lighter operation) guarantees the MT9083 is ready when you are.

Portable
With its light weight design and user friendly dimensions, the MT9083 is perfect for the outside plant environment and can easily be managed with one hand. The shoulder strap (part of the protector option) further increases portability when travelling from the truck to the testing site.

Rugged
The MT9083 features a solid casework with no fans or vents to keep dust or moisture from entering the unit. In addition, the protector option (MT9083A2/B2/C2-010) includes rubber bumpers and a display cover for additional protection from those minor mishaps.

Generous Data Storage
With the ability to store up to 1,000 traces in internal memory and up to 30,000 via a USB device, the MT9083 offers plenty of storage for collecting and managing data.

No Experience Required
With the ACCESS Master, the experience is built in. With specialized testing modes, automatic parameter selection, PASS/FAIL indicators as well as features to virtually eliminate the chance to get “bad” results, the MT9083 can make anyone seems like a 20 year veteran. Let it help you master your network.

Easy “drag and drop” File Transfers
When the MT9083 is connected to a PC via a USB cable, the internal memory of the ACCESS Master can be directly accessed. Data can be selected, dragged and dropped into the PC memory, greatly simplifying file transfers. The MT9083 also supports use of USB memory sticks.

Common OTDR Data Format
The MT9083 supports the universal Telcordia SR-4731 (issue 2) format making it compatible with not only legacy Anritsu and NetTest products, but with many other vendors data.

Free and Simple Software Upgrades
Firmware upgrades are easily performed via USB and available from the Anritsu website for registered users or through Anritsu customer support.

Active Fiber Check
Not only can OTDR measurements be affected when the optical fiber is in-service but there is a potential risk of damage to the transmitter and OTDR receiver. To prevent these problems, the MT9083 verifies if light is present before starting measurement and will not transmit if it is.
An on-screen warning and internal OTDR protection are also part of this useful feature.

Integrated Macrobend Detection
With many technicians making the switch from copper installations to optical fiber, installation issues such as macrobends are bound to occur. To help prevent this, Anritsu has developed a macrobend detection feature for the MT9083 that will alert technicians when a possible macrobend is present. This provides a higher quality of service for the customer and eliminates costly troubleshooting for you.

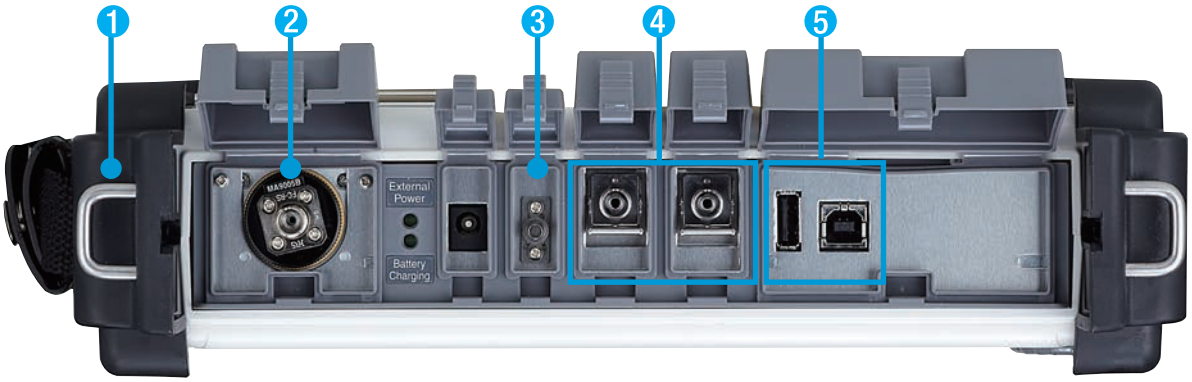
Multiple Wavelengths and Models
Whether you need singlemode and multimode testing capabilities in one unit or standard 1310 nm & 1550 nm installation wavelengths plus 1650 nm with a filter for maintenance testing. The ACCESS Master can be configured to meet your individual needs.

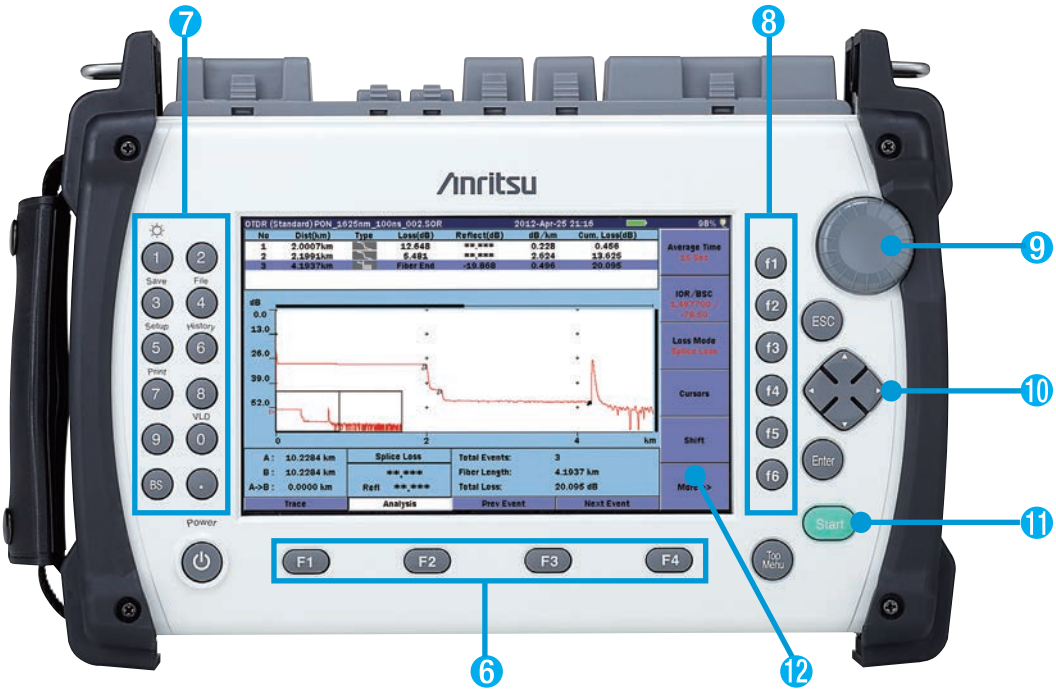
Compact, Light Weight and All-in-one

With its versatile built-in functions, the ACCESS Master offers the ideal solution for efficient optical fiber construction and maintenance.

All-in-one Test Set

The MT9083 delivers full featured OTDR performance plus loss test set and quality of service measurement in a surprisingly small and lightweight package. At only 28.4 cm wide × 20 cm tall × 7.7 cm deep and 2.6 kg (5.7 lbs.), it is field portable, yet rugged enough to withstand the outside plant environment. When equipped with power meter and visual light source options, it replaces several, larger pieces of test equipment.





1. Up to 10 hours battery life plus quick recharge
2. Optical Power meter options with up to +30 dBm measurement range
3. Visible laser source for easy fiber identification and bend/break location
4. Up to three wavelengths from a single port for any application
5. Dual USB ports for easy data transfer and connector inspection microscope
6. Dedicated short-cut keys to quickly move between events or view trace fill screen
7. Numeric keypad with dedicated keys for easy operation
8. Dedicated function keys for selecting parameters
9. Rotary dial for precision cursor movement
10. Arrow keys for quick zooming and navigation through menus
11. START key for simple one-button testing
12. 7 inch indoor/outdoor color TFT-LCD display with LED backlight

Exceptional OTDR Performance from the World's First OTDR Manufacturer

Evaluation of access networks ranging from a few kilometers to metro networks reaching up to 100 km in length is becoming commonplace, requiring OTDRs to have the performance and functions for evaluating both short and long fibers. Designed with this in mind, the ACCESS Master delivers on both fronts.

Improved Short Fiber Analysis

An event dead zone of less than 1 m (80 cm typical) and a sampling resolution of 5 centimeters allow the MT9083 to evaluate connections and troubleshoot central office, FTTx and intra-building faults with ease – providing a level of detail never before seen.

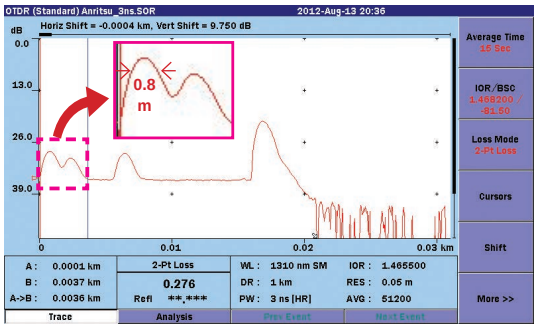


Fig. 3: With its high resolution optics, the MT9083 provides exceptional detail allowing users to quickly determine where the problem is-even when events are closely spaced.

Extended Range Testing of 200 + km Fibers

In addition to its superb high-resolution performance, the MT9083 also features up to 46 dB of dynamic range allowing it to easily test 200 + km spans making it a very useful tool for any network type.

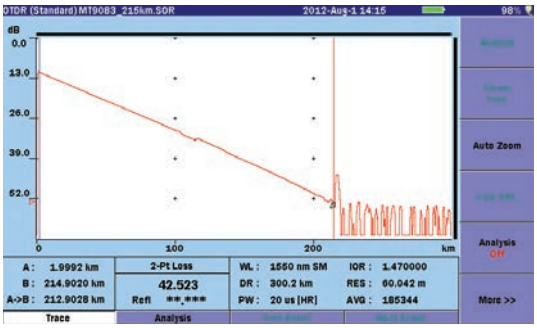


Fig. 4: Spans of over 200 km are also easily tested making the MT9083 the only tool you will need - for any network type.

Convenient Features

Full PON Testing

Many OTDRs claim to be able to test PONs but being able to do it with both high resolution and high range is what sets the MT9083 series apart. Splitters up to a single 1 × 128 or closely spaced, cascaded splitters are completely and accurately measured with industry leading resolution.

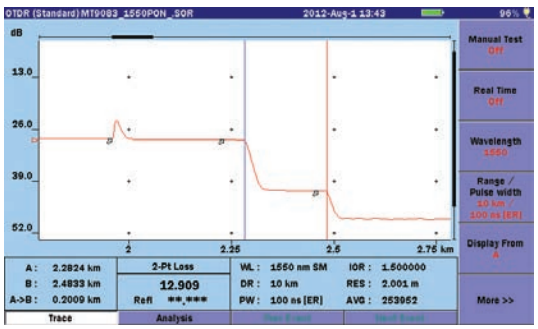


Fig. 5: The MT9083 series provides high range and excellent resolution of PON systems

Waveform Comparison Function

Compare current and stored trace data to easily assess changes over time and to locate problems before they affect service or compare traces at different wavelengths to identify installation issues such as macrobending.

Standard High Resolution Display

The MT9083 series now features a standard 7" high resolution display with excellent readability both indoors and outdoors – even in direct sunlight.

Dual-mode High Resolution/Enhanced Range Operation

While many OTDRs provide good deadzone resolution or high dynamic range, the MT9083 series features a dual-mode design that allows a single unit to excel in both categories. The user can simply select HIGH RESOLUTION (HR) mode or ENHANCED RANGE (ER) based on the current task at hand. When HR mode is selected, this mode provides good measurement range with an industry leading deadzone (<1 m). When ER mode is selected, it provides unparalleled performance for measurement distance, measurement speed and deadzone - allowing a 100 km fiber to be tested in less than 10 seconds. ER mode is also used for testing PON networks with up to 128 branches.

Up to 150,001 Data Points for Increased Accuracy

The MT9083 series also collects up to 150,001 with a resolution of just 2 m. This provides the necessary detail when installing and maintaining fiber spans.

Event Table with User Defined Thresholds

PASS/FAIL thresholds for key acceptance criteria such as splice loss, connector loss and reflectance can be set in the MT9083 allowing technicians to easily assess a fiber's condition. Failing values are clearly highlighted in the event table alerting technicians of potential problems.

Solutions for Various Measurement Needs

Products that offer many features are often complicated to use. The ACCESS Master however, simplifies operation by offering task-specific testing modes that automate testing and guide novice users. Dedicated testing modes are available for fault location, cable installation, loss budget testing, and visual fault location.

Fiber Visualizer

"Fiber Visualizer" is a new fault location function designed to simplify the entire testing process. Fiber Visualizer automatically selects the testing parameters to ensure the correct setup and provides a simple graphical summary of the fiber under test within seconds.
A comprehensive PDF report can then be customized and generated, completing the testing process.
In addition, these files can be opened on PDF viewer.

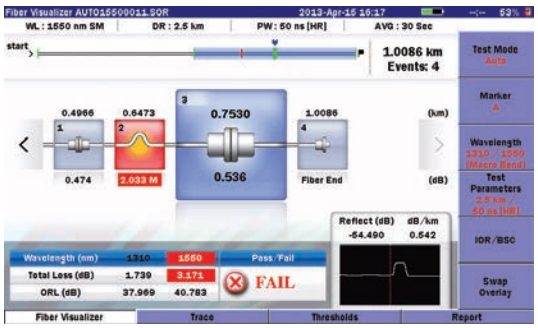
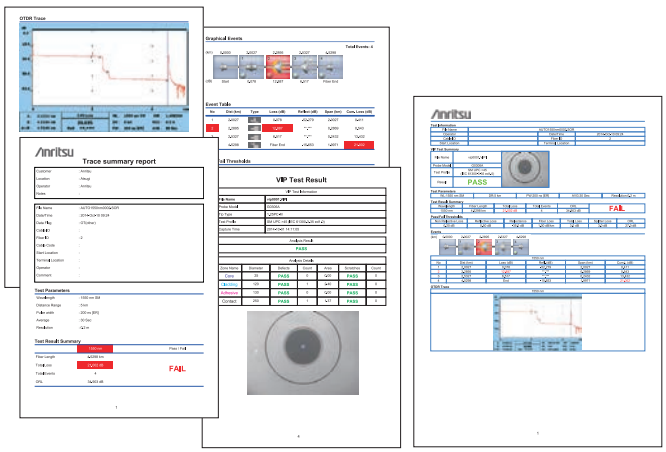


Fig. 6: Easy to understand graphical summary



(Full report type) (Simple report type)

Fig. 7: PDF report generation

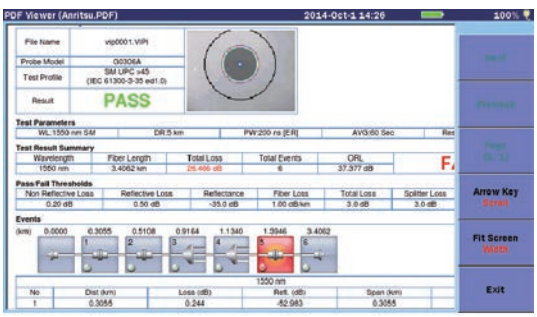


Fig. 8: PDF Viewer

Simple Operation

To simplify testing, the MT9083 features dedicated measurement modes via the top menu to automate and simplify the task at hand.

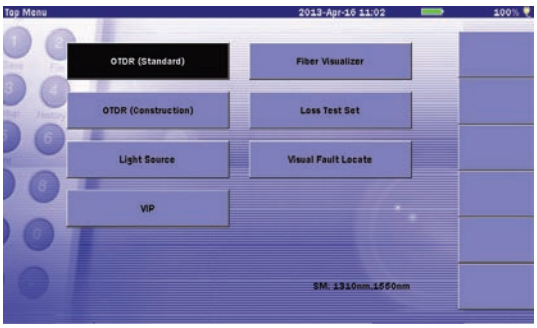


Fig. 9: Dedicated measurement modes simplify testing for any skill level.

General OTDR Testing

For those who have more experience or would like to perform more advanced testing, STANDARD OTDR mode allows the user to set all parameters and compare traces manually, automatically or somewhere in between.

Optical Fiber Construction and Certification

When final cable acceptance is the task at hand, CONSTRUCTION mode greatly simplifies operation through its innovative wizard. Select the required testing wavelengths, number of fibers and file naming scheme and construction mode acts as the project manager guiding the user through the testing, while ensuring consistency with testing parameters and filenames - virtually eliminating user induced errors and missing files.

Value

Whatever your construction or maintenance needs, the new ACCESS Master MT9083 is designed to reduce the time to install, commission and maintain your optical networks – without breaking your budget.

NETWORKS PC Software for Analysis and Reporting

Once the data is collected, NetWorks PC emulation software makes analysis and report generation a breeze. Professional reports including splice loss, fiber acceptance and exceptions as well as various printing options are possible with only a few mouse clicks.

Template Feature

To simplify fiber acceptance, the Access Master incorporates an on-the-fly template feature to quickly locate and measure all splices in a fiber cable. In addition, an on-screen highlight blocks out the expected splice locations during trace acquisition.

Remote Command Support

To simplify and automate testing in manufacturing and lab environments, the MT9083 supports SCPI commands.
Through the use of a USB converter and a common scripting program such as LabView™, the MT9083 can be quickly integrated and immediately reduce testing times. Remote control can also be used for remote, unmanned monitoring applications.

A True All-in-One Tester

An OTDR, Optical Power Meter, and Visible Light Source are built into Anritsu's compact, light-weight MT9083 supporting tasks ranging from searching for faults in optical fibers to QoS evaluation to FTTx troubleshooting with just one unit.

Complete Loss Test Set Features

Standard Stabilized Light Source

The OTDR port also functions as a stabilized light source providing continuous wave, 270 Hz, 1 kHz and 2 kHz modulations for easy fiber identification. This is standard equipment on all single mode models - a chargeable option on most other OTDRs.

Standard or Optional Integrated Power Meter

In the base unit, the OTDR port also functions as an integrated power meter for verification of optical power levels. Additional power meter options are available for higher power transmissions and loop-back testing.

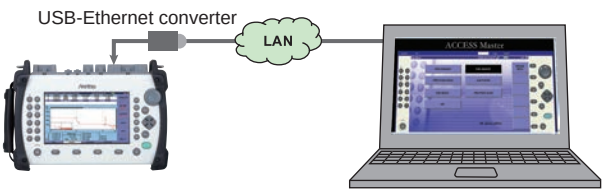
Visual Laser Source for Easy Fault Location and Fiber Identification

A Visible Light Source is useful for tracking down bad connections, splices and fiber management issues such as macrobends.
The optional Visible Light Source is factory installed in the MT9083 and features up to 5 km (3 miles) of operation.

Others

Remote GUI Function

The MT9083 can be operated PC via LAN (Ethernet network) without any additional software installed. A PC is shown OTDR screen and can operate them using a mouse on PC. You can operate far end MT9083 easily.



∗ This function is required to use "USB-Ethernet Converter (J1480A)", it's needed to connect USB Port A on the MT9083 series.

Password Protection Feature

A password protection feature has been added to the MT9083. When you use this feature, users will be required to enter a password as soon as the system boots. Users will not be able to use the system until the password is authenticated.
This feature is useful if you want to limit the use of your measuring instruments to designated users, or you want to protect important files on the system's on-internal memory.

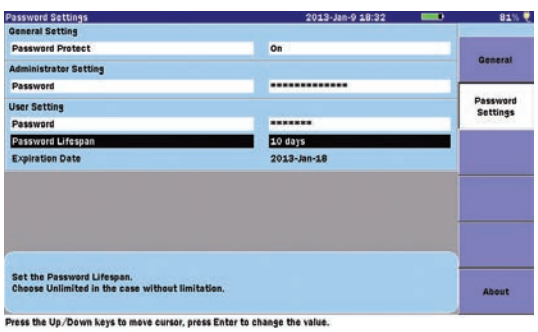


Fig. 10: Password Setting

Video Inspection Probe (VIP) Application – Complete Connector Inspection

Data Table for Saved Results

Loss test set measurements for multiple wavelengths can be saved into a results table for easy comparison and archiving. The table can also be saved as a text file and exported to a PC spread-sheet program for further manipulation or integration into a standard company template.

Video Inspection Probe Support

When equipped with the optional connector video inspection probe (VIP), the MT9083 becomes a powerful tool for evaluating connector cleanliness and quality. Connector end faces can be safely viewed and images stored to document all aspects of your network.
We have added a Pass/Fail analysis function to the conventional VIP. This new function inspects the state of the connector end using video. It can automatically inspect the end of the optical connector for defects and scratches (The automatic pass/fail determination is made in accordance with the IEC61300-3-35 standard.)
You can also create a PDF report on the MT9083 series.

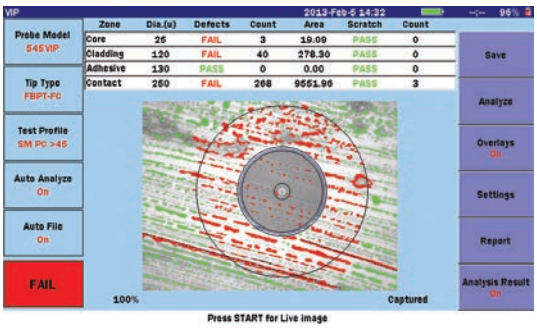


Fig. 11: VIP Mode

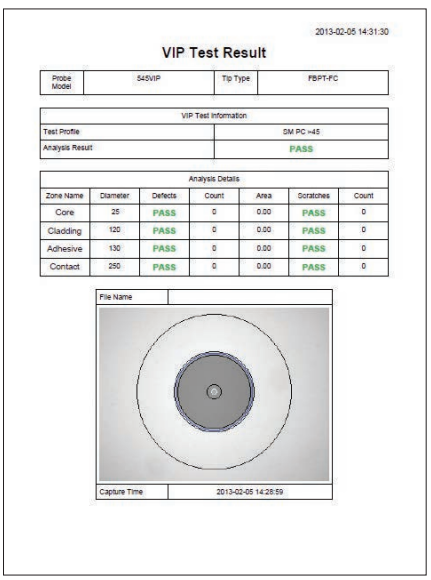


Fig. 12: PDF Report

Specifications

● MT9083A2/B2/C2 ACCESS Master Common Specifications

Dimensions and Mass	Without Protector (Option 010)	Dimensions: 270 (W) × 165 (H) × 61 (D) mm, 10.6 × 6.5 × 2.4 inches
		Mass: 1.6 kg, 1.9 kg including battery
	With Protector (Option 010)	Dimensions: 284 (W) × 200 (H) × 77 (D) mm, 11.2 × 7.9 × 3 inches
		Mass: 2.6 kg including battery
Display	7-inch TFT-LCD (800 × 480, with LED backlight), Indoor/Outdoor type	
Interface	USB 1.1, Type A × 1 (memory), Type B × 1 (USB mass storage)	
Data Storage	Internal memory: 440 MB (up to 1000 traces), External memory (USB): up to 30,000 traces with 512 MB	
Power Supply	12 V(dc), 100 V(ac) to 240 V(ac), Allowable input voltage range: 90 V to 264 V, 50 Hz/60 Hz	
Battery	Type: Lithium-ion Operating Time*1: 12 hours, Telcordia GR-196-CORE Issue 2, September 2010 Recharge Time: <5 hours (power off)	
Power Saving Functions	Backlight off: Disable/1 to 99 minutes Auto shutdown: Disable/1 to 99 minutes	
Vertical Scale	0.13, 0.33, 0.65, 1.3, 3.25, 6.5, 13 dB/div	
IOR Setting	1.400000 to 1.699999 (0.000001 steps)	
Units	km, m, kft, ft, mi	
Languages	User selectable (English, Simplified Chinese, Traditional Chinese, French, German, Italian, Korean, Portuguese, Russian, Spanish and Swedish - contact Anritsu for availability of others)	
Sampling Points*2	Normal: 5001, High density: 20001 or 25001, Very high density: 100,001 or 150,001	
Sampling Resolution	5 cm (min.)	
Reflectance Accuracy	Single mode: ±2 dB, multimode: ±4 dB	
Distance Accuracy	±1 m ±3 × measurement distance × 10^{-5} ± marker resolution (excluding IOR uncertainty)	
Distance Range	Single mode: 0.5, 1, 2.5, 5, 10, 25, 50, 100, 200, 300 km Multimode: 0.5, 1, 2.5, 5, 10, 25, 50, 100 km	
Testing Modes	Fiber Visualizer: Provides end/break location, end to end loss, fiber length, easy graphical summary, PDF report, PDF viewer Standard OTDR: User selectable automatic or manual set-up Construction OTDR: Automated, multi-wavelength testing Light source: Stabilized Light source (CW, 270 Hz, 1 kHz, 2 kHz output) Loss test set (optional): Power meter and Light source Connector Video Inspection Probe Visual fault locator (optional): Visible red light for fiber identification and troubleshooting	
Fiber Event Analysis	Auto or manual operation, displayed in table format User defined PASS/FAIL thresholds: - Reflective and non-reflective events: 0.01 to 9.99 dB (0.01 dB steps) - Reflectance: –70.0 to –20.0 dB (0.1 dB steps) - Fiber end/break: 1 to 99 dB (1 dB steps) Number of detected events: up to 99 Macrobend detection	
OTDR Trace Format	Telcordia universal. SOR, issue 2 (SR-4731)	
Other Functions	Real time sweep*3: 0.15 sec. Loss modes: 2-point loss, dB/km, 2-point LSA, splice loss, ORL Averaging modes: Timed (1 to 3600 sec.) Live Fiber detect : Verifies presence of communication light in optical fiber Connection check: Automatic check of OTDR to FUT connection quality Trace overlay and comparison, Template function, USB keyboard support, Remote control, Video output to PC Password protection feature	
Environmental Conditions	Operating temperature and humidity: –10° to +50°C, <80% (non-condensing) Storage temperature and humidity: –20° to +60°C, <80% (non-condensing) Vibration: Conforming to MIL-T-28800E Class 3 Dust proof: MIL-T-28800E (Dust Exposure) Class 2 Drip proof: IP51 (IEC 60529), JIS C 0920 TYPE I	
EMC	EN61326-1, EN61000-3-2	
LVD	EN61010-1	

∗1: Typical, backlight off, sweeping halted at 25°C, 6 hours typical continuous testing
∗2: Either high density value is selected depending on distance range
∗3: Resolution: Low Density

● OTDR Specifications

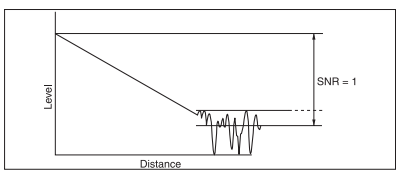
MT9083C2							
Options	HR/ER Mode*4	Wavelength*5	Fiber Type	Pulse Width	Dynamic Range*6,*7	Deadzone (Fresnel)*8 (IOR = 1.500000)	Deadzone (Backscatter)*9 (IOR = 1.500000)
MT9083C2-053	✓	1310/1550 nm ±25 nm	Single Mode (SMF) 10/125 µm ITU-T G.652	3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000, 10000, 20000 ns	46/46 dB*11 25/25 dB*10 (Pulse width: 100 ns)	≤1 m, ≤80 cm (typ.)	≤3.8/4.3 m
MT9083C2-057	✓	1310/1550/1625 nm ±25 nm			46/46/44 dB*11 25/25/23 dB*10 (Pulse width: 100 ns)		≤3.8/4.3/4.8 m

MT9083B2							
Options	HR/ER Mode*4	Wavelength*5	Fiber Type	Pulse Width	Dynamic Range*6,*7,*13	Deadzone (Fresnel)*8 (IOR = 1.500000)	Deadzone (Backscatter)*9
MT9083B2-053	✓	1310/1550 nm ±25 nm	Single Mode (SMF) 10/125 µm ITU-T G.652	3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000, 10000, 20000 ns	42/41 dB*11	≤1 m ≤80 cm (typ.)	≤5/5.5 m
MT9083B2-055	✓	1310/1550 nm ±25 nm, 1650 nm ±5 nm			42/41/35 dB*11		≤5/5.5/6.5 m
MT9083B2-056	✓	1310/1490/1550 nm ±25 nm			42/41/41 dB*11		≤6/6.5/6.5 m
MT9083B2-057	✓	1310/1550/1625 nm ±25 nm			40/39/38 dB*11		≤6/6.5/7.5 m
MT9083B2-058	✓	1310/1490/1550/ 1625 nm ±25 nm			42/41/41/40 dB*11		≤7/7.5/7.5/8.5 m
MT9083B2-063	✓	1310/1550 nm ±25 nm, 850/1300 nm ±30 nm	HYBRID (SMF/MMF)*12	SMF: above MMF: 3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000 ns 850 nm: Not support 1000, 2000, 4000 ns	42/41 dB*11 29/28 dB*11		≤5/5.5 m, ≤4/5 m (3/4 m typ.)

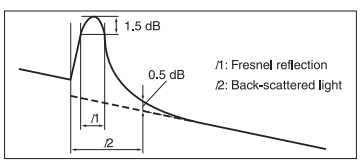
MT9083A2							
Options	HR/ER Mode*4	Wavelength*5	Fiber Type	Pulse Width	Dynamic Range*6,*7,*13	Deadzone (Fresnel)*8 (IOR = 1.500000)	Deadzone (Backscatter)*9
MT9083A2-073	✓	1310/1550 nm ±25 nm	Single Mode (SMF) 10/125 µm ITU-T G.652	3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000, 10000, 20000 ns	39/37.5 dB*11	≤1 m ≤80 cm (typ.)	≤5/5.5 m
MT9083A2-055	✓	1310/1550 nm ±25 nm, 1645 nm to 1655 nm			38.5/37/34.5 dB*11		≤5/5.5/6.5 m
MT9083A2-057	✓	1310/1550/1625 nm ±25 nm			37/35.5/32.5 dB*11		≤6/6.5/7.5 m
MT9083A2-063	✓	1310/1550 nm ±25 nm, 850/1300 nm ±30 nm	HYBRID (SMF/MMF)*12	SMF: above MMF: 3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000 ns 850 nm: Not support 1000, 2000, 4000 ns	39/37.5 dB*11 29/28 dB*11		≤5/5.5 m, ≤4/5 m (3/4 m typ.)

Laser Safety*14	IEC 60825-1: 2007 CLASS 1M: option 053, 055, 056, 057, 058, 063, 073 21 CFR1040.10 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007

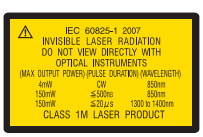
∗4: HR: High Resolution mode for Short dead zone.
ER: Enhanced Range mode for PON measurement.
∗5: 25°C, Pulse width: 1 µs (all except 850 nm, 1300 nm), 850 nm/1300 nm: 100 ns
∗6: Pulse widths: 20 µs (Options 053, 055, 056, 057, 058, 063, 073, 1310 nm/1550 nm) at Distance range: 100 km
Pulse width: 4 µs (Options 063, 1300 nm) at Distance range: 25 km
Pulse width: 500 ns (Options 063, 850 nm) at Distance range: 25 km
Averaging: 180 sec., SNR = 1, 25°C
∗7: Dynamic range (one-way back-scattered light), SNR = 1: The level difference between the RMS noise level and the level where near end back-scattering occurs.



∗8: Pulse width: 3 ns (Options 053, 055, 056, 057, 058, 063, 073)
Return loss: 40 dB, 25°C (Refer to the figure below)
∗9: Pulse width 10 ns, return loss 55 dB, Deviation ±0.5 dB, 25°C
(Options 053, 055, 056, 057, 058, 063, 073. All except 850 nm/1300 nm)
Pulse width 3 ns, return loss 40 dB, Deviation ±0.5 dB, 25°C
(Options 063, 850 nm/1300 nm)



∗10: Pulse width: 100 ns (ER Mode), Distance range: 100 km
Averaging: 180 sec., SNR = 1, 25°C
∗11: Typical. Subtract 1 dB for guarantee
∗12: At measurement of 50 µm/125 µm MM Fiber, the dynamic range drops by about 3.0 dB
∗13: At 1.65 µm: With background light, 1.31 µm/1.55 µm, –19 dBm CW light
∗14: Safety measures for laser products
This product complies with optical safety standards in IEC 60825-1, 21CFR1040.10 and 1040.11; the following descriptive labels are affixed to the product.



THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007

Light Source Specifications – Standard on all models*15	
Stabilized Light Source (through OTDR port)	
Wavelength*17	Same as OTDR
Spectral Width*17	≤5 nm (1310 nm) ≤10 nm (850/1300/1490/1550/1625 nm) ≤3 nm (1650 nm)
Wavelength Accuracy	850/1300/1310/1490/1550/1625 nm: ±30 nm 1650 nm: ±5 nm
Fiber Type	Same as OTDR
Optical Connector	Same as OTDR
Output Power*17	–5 ±1.5 dBm
Output Stability*18	±0.1 dB
Modes of Operation*19	CW, 270 Hz, 1 kHz, 2 kHz
Laser Safety	Same as OTDR

Power Meter Specifications – Standard on all models*15	
Standard Integrated Power Meter*16 (through OTDR port)	
Maximum Input	+10 dBm
Measurement Range	–50 to –5 dBm
Fiber Type	Same as OTDR
Optical Connector	Same as OTDR
Accuracy*20	±6.5%
Setting Wavelengths	1310, 1550, 1625, 1650 nm (Options 053, 055, 057, 063, 073) 1310, 1490, 1550, 1625 nm (Options 056, 058)
Features	Store reference, loss table

Loss Test Set Specifications – Optional on all Models*17, *18 Power meters (004, 005 and 007)			
Option Number	MT9083A2/B2/C2-007	MT9083A2/B2/C2-004	MT9083A2/B2/C2-005
Fiber Type	Single Mode: 10 µm/125 µm (G.652), Multimode: 62.5 µm/125 µm	Single Mode: 10 µm/125 µm (G.652) ∗PC only for UPC connector	Single Mode: 10 µm/125 µm (G.652)
Measurement Range*21	–67 to +6 dBm*22	–50 to +23 dBm	–43 to +30 dBm
Wavelength Range	750 nm to 1700 nm	1200 nm to 1700 nm	
Setting Wavelengths	850, 1300, 1310, 1383, 1490, 1550, 1625, 1650 nm	1310, 1383, 1490, 1550, 1625, 1650 nm	
Optical Connector	Universal – uses LP-XX adapters	Universal – uses JXXXX adapters (same as OTDR)	Universal – uses MA9005B adapters
Accuracy*23	±5%		
Modulation	CW, 270 Hz, 1 kHz, 2 kHz		
Features	Store reference, loss table		
Environmental	Operating temperature and humidity: 0° to +50°C, <80% (non-condensing)		

Visible Light Source (Option 002)	
Central Wavelength	650 nm ±15 nm (at 25°C)
Optical Output	0 ±3 dBm (CW)
Output Optical Fiber	10 µm/125 µm, SMF (ITU-T G.652)
Optical Connector	2.5 mm universal
Laser Safety*24	IEC 60825-1: 2007 CLASS 3R 21CFR1040.10 and 1040.11 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007
Environmental	Operating temperature and humidity: 0° to +50°C, <80% (non-condensing)

∗15: Some models do not support power meter (See next page)
∗16: If option 004, 005 or 007 is ordered, the standard integrated power meter is not available
∗17: CW, 25°C
∗18: CW, –10° to +50°C (±1°C) difference between max/min. values over 1 minute, SM fiber 2 m
∗19: Modulation +1.5% with 10 minute warm up
∗20: CW input, –20 dBm at 1550 nm, 23°C ±2 Using Master FC connector
∗21: Peak power, subtract 3 dB for modulated tones
∗22: –60 to +3 dBm (Option 007 @850 nm)
∗23: CW, model 007: At –10 dBm, 1310 nm/1550 nm, At –10 dBm, 850 nm, 25°C
model 004/005: At 0 dBm, 1310 nm and 1550 nm, Using Master FC connector, After zero offset
∗24: Safety measures for laser products
This option complies with optical safety standards in IEC 60825-1, 21CFR1040.10 and 1040.11; the following descriptive labels are affixed to the product.

THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007

Standard Light Source and Power Meter Built-in

LS: MT9083A2/B2/C2 standard built-in stabilized Light Source, OPM: MT9083A2/B2/C2 standard built-in Optical Power Meter

Options	Optical Port	LS	OPM
MT9083B2/C2-053	1310/1550 nm SM	✓	✓
MT9083A2-073	1310/1550 nm SM	✓	✓
MT9083A2/B2-055	1310/1550 nm SM	✓	✓
	1650 nm SM	✓	✓
MT9083B2-056	1310/1490/1550 nm SM	✓	✓
MT9083A2/B2/C2-057	1310/1550/1625 nm SM	✓	✓
MT9083B2-058	1310/1490/1550/1625 nm SM	✓	✓
MT9083A2/B2-063	850/1300 nm MM	✓	—
	1310/1550 nm SM	✓	✓

Battery Pack: Z0921A

Battery	Lithium Ion secondary battery
Voltage, Capacity	11.1 V, 4200 mAh
Dimensions and Mass	53 (W) × 19 (H) × 215 (D) mm, 330 g (typ.)
Environmental Conditions	Charging: +5° to +30°C, ≤80%RH
	Discharging: –20° to +60°C, ≤80%RH
	Storage: –20° to +50°C, ≤80%RH

AC Adapter: Z1625A

Rated AC Input	100 V(ac) to 240 V(ac), 50 Hz/60 Hz
Rated DC Output	12 V(dc), 5 A
Dimensions and Mass	47 (W) × 33 (H) × 112 (D) mm, ≤240 g
Environmental Conditions	Operating: 0° to +45°C, 20 to 80% R.H.
	Storage: –20° to +70°C, 10 to 90% R.H.

Ordering Information

Please specify the model/order number, name and quantity when ordering.
The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

1) Specify Base Unit

Includes ACCESS Master OTDR, AC charger/adapter, line cord, battery pack (1), printed quick user's guide and user's manual (CD).

Model/Order No.	Description
MT9083A2/B2/C2	ACCESS Master base unit, Enhanced display for indoor/outdoor use

2) Select Optical Configuration

Includes choice of OTDR connector adapters – select in step 5 below.

MT9083C2 Series (OTDR Ultra-high Performance Model)

Model/Order No.	Wavelength	Application
MT9083C2-053	1310/1550 nm, SM	General-purpose model for construction, maintenance and fault location
MT9083C2-057	1310/1550/1625 nm, SM	General-purpose plus enhanced macrobend detection at 1625 nm

MT9083B2 Series (OTDR High Performance Model)

Model/Order No.	Wavelength	Application
MT9083B2-053	1310/1550 nm, SM	General-purpose model for construction, maintenance and fault location
MT9083B2-055	1310/1550 nm & 1650 nm, SM	General-purpose models for construction, maintenance and fault location plus In-service measurement – integrated filter to block transmissions
MT9083B2-056	1310/1490/1550 nm, SM	General-purpose plus 1490 nm for FTTx/PON applications
MT9083B2-057	1310/1550/1625 nm, SM	General-purpose plus enhanced macrobend detection at 1625 nm
MT9083B2-058	1310/1490/1550/1625 nm, SM	Full spectrum characterization for CWDM applications
MT9083B2-063	850/1300 nm MM, 1310/1550 nm SM	Best unit for contractors or anyone who installs or maintains hybrid networks

MT9083A2 Series (OTDR Base Model)

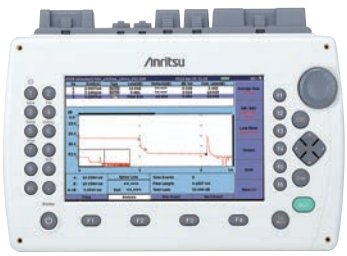
Model/Order No.	Wavelength	Application
MT9083A2-073	1310/1550 nm, SM	General-purpose model for construction, maintenance and fault location
MT9083A2-055	1310/1550 nm & 1650 nm, SM	
MT9083A2-057	1310/1550/1625 nm, SM	General-purpose plus enhanced macrobend detection at 1625 nm
MT9083A2-063	850/1300 nm MM, 1310/1550 nm SM	Best unit for contractors or anyone who installs or maintains hybrid networks

Note: Models noted feature user-selectable enhanced range (ER) for measuring PON systems/detecting faults in short time and high resolution (HR) for the shortest dead zone.

3) Select Factory Installed Options

Must be added as separate, chargeable line items.

Model/Order No.	Description
MT9083A2/B2/C2-010	Protector option (includes rubber bumpers, display cover and shoulder strap)



Without Protector option-010

With Protector option-010

4) Select Loss Test Set Options

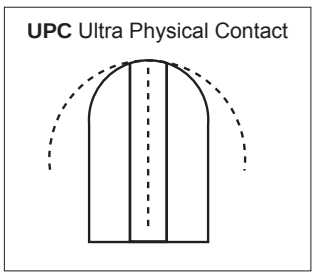
Optical Power Meter Must be added as separate, chargeable line items.	
Model/Order No.	Description
MT9083A2/B2/C2-004	SMF Optical Power Meter (UPC only)
MT9083A2/B2/C2-005	SMF High Power Optical Power Meter (UPC/APC)
MT9083A2/B2/C2-007	SMF/MMF Optical Power Meter (UPC/APC)
Visible Light Source	
Model/Order No.	Description
MT9083A2/B2/C2-002	Visible Laser Diode

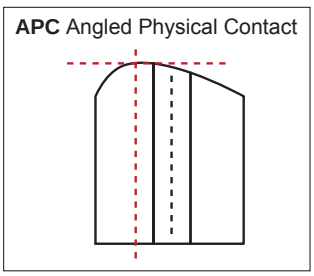
5) Select Connector Types

The ACCESS Master MT9083 can be optioned to feature up to three optical ports – single mode OTDR, multimode OTDR and an Optical Power Meter (options -004, -005, and -007). Selecting a single connector code below will populate all optical ports with that connector type or customer can select different adapters by specifying the adapter for each of the three optical ports – see examples below.

Optical Connectors One adapter type is provided for each port at no charge - must be added as separate line items. NOTE: FC-APC and SC-APC are not available for MM OTDR or Optical Power Meter.			
Model/Order No.	Description	Model/Order No.	Description
MT9083A2/B2/C2-025	FC-APC Connector - single mode OTDR only (additional charge applies)	MT9083A2/B2/C2-038	ST Connector
MT9083A2/B2/C2-026	SC-APC Connector - single mode OTDR only (additional charge applies)	MT9083A2/B2/C2-039	DIN Connector
MT9083A2/B2/C2-037	FC Connector	MT9083A2/B2/C2-040	SC Connector

Note: UPC and APC connectors are not compatible – the internal optics are different and must be specified at time or order.





Examples:

1) MT9083B2-053 with MT9083B2-004 Power Meter option
Customer can specify “MT9083B2-040 for the SM OTDR” port and “MT9083B2-037 for the OPM” port at no charge.

2) MT9083A2-063 with MT9083A2-007 Power Meter option
Customer can specify “MT9083A2-040 for the SM OTDR” port, “MT9083A2-037 for the MM OTDR” port and “MT9083A-037 for the OPM” port at no charge.

3) MT9083C2-053 with no options
Customer can specify “MT9083C2-026 for the SM OTDR” port however an additional charge applies.

6) Select Accessories & Replacement Items

Accessories Must be added as separate, chargeable line items.			
Model/Order No.	Description	Model/Order No.	Description
W3644AE	MT9083 Series ACCESS Master Operation Manual (CD)	Z1632A	Battery Charger
W3634AE	MT9083 Operation Manual (Hard copy)	J1530A	SC Plug-in Converter (UPC(P)-APC(J))
W3637AE	MT9083 Quick User's Guide (Hard copy)	J1531A	SC Plug-in Converter (APC(P)-UPC(J))
B0582A	Soft Carrying Case	J1532A	FC Plug-in Converter (UPC(P)-APC(J))
B0583A	Hard Transit Case (for MT9083 - attache style)	J1533A	FC Plug-in Converter (APC(P)-UPC(J))
B0549	Hard Carry Case (for MT9083 with handle and wheels)	J1534A	LC-SC Plug-in Converter (for SM, SC(P)-LC(J))
Z0921A	Battery Pack (for MT9083)	J1535A	LC-SC Plug-in Converter (for MM, SC(P)-LC(J))
Z1625A	AC Adapter	J1295	Car Plug Cord
J0979	A-2 (Japan) Power Cord	J1480A	USB-Ethernet Converter
J0980	A-2 Power Cord (for USA, Canada, Taiwan)	OPTION-545VIP	Connector Video Inspection Probe (VIP) Option (× 200, × 400)
J0981	B4 Power Cord		
J0982	C7 Power Cord	G0306A	Connector Video Inspection Probe Lite Option (× 400)
J0983	S3 Power Cord	NETWORKS	PC Emulation Software for Data Analysis and Reporting
J1027	P4 Power Cord		
J1028	D1 Power Cord		

Retrofit Options for existing units – unit must be returned to authorized service center	
MT9083A2/B2/C2-110	Protector Option (Retrofit)
MT9083A2/B2/C2-107	SMF/MMF Optical Power Meter (Retrofit)
MT9083A2/B2/C2-104	SMF Optical Power Meter (Retrofit)
MT9083A2/B2/C2-105	SMF High Power Optical Power Meter (Retrofit)

Replacement Adapters			
Type	OTDR and Power Meters (MT9083A2/B2/C2-004)	Power Meter (MT9083A2/B2/C2-005 only)	Power Meter (MT9083A2/B2/C2-007 only)
FC	J0617B	MA9005B-37	LP-FC
Angled FC (AFC)	J0739A	MA9005B-37	LP-FC
ST	J0618D	MA9005B-38	LP-ST
DIN	J0618E	MA9005B-39	LP-DIN
HMS-10A	J0618F	MA9005B-43	N/A
SC (UPC or APC)	J0619B	MA9005B-40	LP-SC

Soft Carrying Case (B0582A)

Hard Carrying Case (B0583A)-Attache style

Hard Carrying Case (B0549)

J1530A to J1535A
Plug-in Converter
(The photo shows the J1534A)

Video Inspection Probe
(OPTION-545VIP)

Video Inspection Probe (× 400)
(G0306A)

MT9090 Series Network Master

MU909011A Fault Locator Module

Compact fault locator instrument for an easy and accurate verification of drop cable installation.

MU909020A OCA Module

Compact CWDM channel analyzer to verify power levels, drift and channel presence of CWDM networks.

MU909014x/15x µOTDR Module

Compact OTDR for full automatic verification of optical networks, FTTHPON, Metro and Core.

MU909060A GigE Module

Dedicated field test solution for installation and troubleshooting Ethernet links in the access network.

Anritsu

Specifications are subject to change without notice.

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